

TREE GRIP

Field of the Invention

The invention is in the field of tree grips.

5 Background of the Invention

United States Patent Number 4,825,586 to Coppedge discloses a Christmas tree stand having a bowl which includes threaded nuts and a set of turn screws threaded through the support collar nuts. Partial cylindrical clamping plates are driven by screws to hold a tree in place.

10 United States Patent Number 5,725,193 to Adams discloses a Christmas tree stand having smooth grippers having an arcuate shape. See, Fig. 6 of the '193 patent.

United States Patent No. 2,913,202 to Meldrum discloses a tree stand including a plurality of arcuate clamping plates having one edge hingedly connected to vertically spaced portions of the inner wall of a cylindrical member.

15 United States Patent No. Des. 359,462 discloses a design for a Christmas Tree Stand.

United States Patent No. D442,883S discloses a design for a Support Stand For Christmas Trees And Other Trees and Plants.

20 United States Patent No. US 6,216,997 B1 discloses a Christmas tree stand which includes a base and a clamping mechanism which has a pair of opposed jaws to clamp the tree.

Christmas trees are popular. Difficulty in orienting and maintaining the trees in a

vertical position is a common problem. Since the trees often bear lights and sometimes even candles, it is imperative that the Christmas trees remain upright in their stands so as to minimize fire risk and also to minimize damage to the tree, decorations on the tree, and surrounding furniture, flooring and woodwork. The problem is exacerbated by the desire
5 to have a larger (taller and wider) Christmas tree.

It is, therefore, desirable to have a device and a method of ensuring that a Christmas tree regardless of size and straightness of the trunk, be securely mounted in an upright position.

It is also desirable to have a device and method of ensuring that a sapling or other
10 young tree is supported to enable growth until replanting can be effected or until the support is no longer necessary for the growth of the tree.

Summary of the Invention

A tree grip having a longitudinal axis and a transverse axis includes a first surface for engagement with the tree and a second surface oriented and facing oppositely to that
15 of the first surface. The first surface includes a plurality of serrations and the second surface includes a bore therein. The bore may be vertically offset. The serrations may be in a variety of patterns or combinations of patterns may be employed. Protrusions may be employed in combination with the serrations or alone.

A plurality of tree grips each having a longitudinal axis and a transverse axis in
20 combination with a tree stand for use in securing a tree in the stand is disclosed. Each of the tree grips includes a first surface and a second surface oriented and facing oppositely

to the first surface. The first surface includes a plurality of protrusions or serrations or a combination of both and the second surface includes a vertically offset bore. The tree stand includes a circumferentially oriented support and a plurality of threaded members oriented radially inwardly with respect to the circumferentially oriented support. The circumferentially oriented support includes respective female threads for interengaging the plurality of threaded members preventing movement of the threaded members relative to the circumferentially oriented support. Each of the threaded members engage a respective bore in each of the respective tree grips thus restraining outward radial movement of the tree grips. The plurality of protrusions and/or serrations substantially engage the tree to secure it within the stand in a vertical position.

It is an object to provide a tree grip for use in combination with a tree stand to secure a tree in a stable, vertical position.

It is an object to provide a method for securing a tree within a tree stand utilizing the tree grips disclosed herein.

These and other objects of the invention will become apparent when reference is made to the Brief Description of the Drawings, Description of the Invention and claims which follow hereinbelow.

Brief Description of the Drawings

Fig. 1 is a perspective view of a prior art Christmas tree stand.

Fig. 2 is a perspective view of the Christmas tree stand of Fig. 1 in combination with the tree grip of the instant invention.

Fig. 3 is a perspective view of the Christmas tree stand of Fig. 3 in combination with the tree grip of the instant invention and a portion of a tree.

Fig. 4 is a partial cross-sectional view taken along the lines 4-4 of Fig. 3.

Fig. 4A is an enlargement of a portion of Fig. 4.

5 Fig. 5 is a top view of the first embodiment of the tree grip.

Fig. 6 is a right side view of the first embodiment of the tree grip.

Fig. 7 is a front view of the first embodiment of the tree grip.

Fig. 8 is a left side view of the first embodiment of the tree grip.

Fig. 9 is a bottom view of the first embodiment of the tree grip.

10 Fig. 10 is a rear view of the first embodiment of the tree grip.

Fig. 11 is a perspective view of the first embodiment of the tree grip.

Fig. 12 is a top view of another embodiment of the tree grip.

Fig. 13 is a top view of yet another embodiment of the tree grip.

Fig. 13A is a right side view of the embodiment of the tree grip of Fig. 13.

15 Fig. 13B is a front view of the embodiment of the tree grip of Fig. 13.

Fig. 14 is a top view of yet another embodiment of the tree grip.

Fig. 14A is a right side view of the embodiment of the tree grip of Fig. 14.

Fig. 14B is a front view of the embodiment of the tree grip of Fig. 14.

Fig. 15 is a top view of yet another embodiment of the tree grip.

20 Fig. 16 is a top view of yet another embodiment of the tree grip.

Fig. 16A is a right side view of the embodiment of the tree grip illustrated in Fig.

16.

Fig. 16B is a front view of the embodiment of the tree grip illustrated in Fig. 16.

Fig. 17 is a top view of yet another embodiment of the tree grip.

Fig. 17A is a right side view of the embodiment of the tree grip illustrated in Fig.

5 17.

Fig. 17B is a front view of the embodiment of the tree grip illustrated in Fig. 17.

Fig. 18 is a top view of yet another embodiment of the tree grip.

Fig. 18A is a right side view of the embodiment of the tree grip illustrated in Fig.

18.

10 Fig. 18B is a front view of the embodiment of the tree grip illustrated in Fig. 18.

Fig. 19 is a top view of yet another embodiment of the tree grip.

Fig. 19A is a right side view of the embodiment of the tree grip illustrated in Fig.

19.

Fig. 19B is a front view of the embodiment of the tree grip illustrated in Fig. 19.

15 Fig. 20 is a top view of yet another embodiment of the tree grip.

Fig. 20A is a right side view of the embodiment of the tree grip illustrated in Fig.

20.

Fig. 20B is a front view of the embodiment of the tree grip illustrated in Fig. 20.

16.

20 A better understanding of the drawings and the invention will be had when
reference is made to the Description of the Invention and Claims which follow

hereinbelow.

Description of the Invention

Fig. 1 is a perspective view 100 of a prior art Christmas tree stand. Most prior art Christmas tree stands employ a plurality of threaded screws 104, 117, 120, 124 having
5 handles 103, 116, 119 and 123 for rotating the screws thus positioning the screws radially inwardly or outwardly. Each of the screws 104, 117, 120, 124 have threads which coact with reciprocal threads 102, 118, 121, 125 in a circumferential support 101 which is part of a container or bowl 130 capable of holding water to feed the tree placed therein.

Reference numeral 105 indicates the interior hollow cavity of the bowl 130.

10 Screws 104, 117, 120, 124 are oriented radially with respect to generally circumferential support 101. Each screw 104, 117, 120 and 124 has a respective end 127, 128, 129 and 126 for engagement with the tree. The ends of the screws have limited diametrical area and, as such, do not support the tree very well. Since, the screws have limited diametrical area they protrude into the tree differently depending on whether a
15 soft spot of the wood is engaged. In a similar fashion, hard spots of the wood do not allow penetration of the screw. Therefore, a user is left with an uneven at best gripping of the tree by the screws. The grips of the instant invention greatly enlarge the surface area which engages the tree. Further, the grips of the instant invention also included serrations and/or protrusions which engage the tree. The grips of the instant invention provide
20 secure engagement of the tree from four positions. It is desirable to use four grips of the instant invention but two grips spaced 180 degrees apart may be used.

Bowl 130 is mounted atop plate 107 and is supported by leg pairs 112, 113; 111, 114; 109, 106; and 110, 115.

Fig. 2 is a perspective view 200 of the Christmas tree stand of Fig. 1 in combination with a plurality of tree grips 201, 202, 203 and 204 of the instant invention.

5 Each of the tree grips 201, 202, 203 and 204 include a first surface having serrations 205, 206 and 207 thereon as viewed in Fig. 2. Screw 117 is illustrated extending into bore 208 of the second oppositely oriented surface. Fig. 3 is a perspective view 300 of the Christmas tree stand of Fig. 1 in combination with the tree grips 201, 202, 203 of the instant invention and a portion of a tree 301.

10 Fig. 4 is a partial cross-sectional view 400 taken along the lines 4-4 of Fig. 3 illustrating tree grips 201 and 203 in cross-section. Preferably the tree grips are manufactured from Aluminum but they may be constructed from steel, wood, polyurethane, nylon, acrylic or any other rigid polymer. Referring still to Fig. 4, threads 104, 120 are received and restrained by respective reciprocal threads 102, 121 which
15 maintain the screws (threaded members) in position relative to the circumferential support 101. Reference numerals 302, 303 indicate compression and deformation of the wood of the tree 301 by serrations 205, 206 of the tree grips 201, 203. Spike 401, part of the prior art tree stand illustrated in Fig. 1, also penetrates wood 301 and stabilizes the tree from the bottom.

20 Bores 304, 305 in the second surface of tree grips 201, 203 are illustrated in Fig. 4. Ends 127, 129 of the screws are illustrated engaging the respective bores 304, 305 which

urge tree grips 201, 203 into compression with the tree 301. This causes the serrations or protrusions to cut into and deform the wood fo the tree 301.

Fig. 4A is an enlargement 400A of a portion of Fig. 4. Fig. 4A illustrates the compression of the wood 301 by serrations 205 of the grip 201. Still referring to Fig. 4A, screw threads 104 interengage reciprocal threads 102 in the outer circumferential support 101. Screw member 104 includes end 127 which engages the bottom of bore 303 which pushes the tree grip 201 leftwardly as screw member 104 is rotated by handle 103. Tree grips 201, 202, 203 and 204 apply pressure to a relatively large surface area of the wooden tree. Additionally, the grips frictionally engage the tree by virtue of the serrations and/or protrusions on the second surface of the tree grip.

The tree grips illustrated in Figs. 2-4A are illustrated in more detail in Figs. 5-11. Preferably, the tree grips are 3 inches long, 3/4 inch wide and 3/4 inch high. The length is sometimes referred to herein as the longitudinal direction and the grip has a longitudinal axis running therethrough. Fig. 5 is a top view of the first embodiment 500 of the tree grip 201, for instance. When referring to Fig. 5, the longitudinal axis (vertical axis) runs vertically through the center of mass of the tree grip. The horizontal axis runs transversely through the tree grip through the center of mass. Reference numeral 501 represents a peak of one of the serrations 504 and reference numeral 502 represents a valley of one of the serrations. Another one of the serrations 503 is illustrated in Fig. 5. Fig. 6 is a right side view 600 of the first embodiment of the tree grip. Fig. 7 is a front view 700 of the first embodiment of the tree grip. Fig. 8 is a left side view 800 of the first

embodiment of the tree grip.

Fig. 9 is a bottom view 900 of the first embodiment of the tree grip illustrating the second surface 901 and a bore 902 therein. Referring to Figs. 4A and 9, the bore of the tree grip is offset from center approximately 1/4 inch and is biased toward the upward end 504 of the tree grip. The bore as shown is approximately 7/16 inch diameter and is approximately 3/8 inch deep. The bore is vertically offset approximately 1/4 inch. The serrations are arranged in a transverse relationship and, when viewed from the side, the base of the triangle is 1/4 inch and the height is 1/8 inch. While this position of the bore and this size of tree grip is disclosed in detail herein, other positions of the bore and other sizes of the tree grip are specifically contemplated. For instance, the tree grip may have different dimensions as the situation requires. It may be taller, wider and higher and may have a bore placed in a different position. For some applications an extremely lengthy (extremely long) tree grip may be used. Fig. 10 is a rear view 1000 of the first embodiment of the tree grip. Fig. 11 is a perspective view 1100 of the first embodiment of the tree grip.

Fig. 12 is a top view 1200 of another embodiment of the tree grip illustrating serrations defined by peaks 1201 and valleys 1202 occurring at a higher frequency than that illustrated in Fig. 5.

Fig. 13 is a top view 1300 of yet another embodiment of the tree grip illustrating serrations diagonally situated having peaks 1302 and valleys 1301. Fig. 13A is a right side view 1300A of the embodiment of the tree grip of Fig. 13. Reference numeral 1303

illustrates the right side of the grip.

Fig. 13B is a front view 1300B of the embodiment of the tree grip of Fig. 13.

Reference numeral 1304 indicates the front side of the grip.

Fig. 14 is a top view 1400 of yet another embodiment of the tree grip illustrating
5 serrations oriented vertically (longitudinally) on the first surface of the grip. Reference
numeral 1401 illustrates a peak and reference numeral 1402 illustrates a valley of one of
the serrations. Reference numeral 1403 illustrates the rightmost serration (tooth) and it
can also be viewed in Fig. 14A, a right side view 1400A of the embodiment of the tree
grip of Fig. 14. Fig. 14B is a front view 1400B of the embodiment of the tree grip of Fig.
10 14.

Fig. 15 is a top view 1500 of yet another embodiment of the tree grip similar to
that of Fig. 5 with indicia (SANTACLAWS) in a recessed portion of the grip. The
recessed portion of the grip is in the form of a rectangular discontinuity in the serrations
located on the first surface of the grip.

Fig. 16 is a top view 1600 of yet another embodiment of the tree grip illustrating
15 peaks 1601 and valleys 1602 illustrated in a curved orientation. Fig. 16A is a right side
view 1600A of the embodiment of the tree grip illustrated in Fig. 16. Fig. 16B is a front
view 1600B of the embodiment of the tree grip illustrated in Fig. 16 illustrating the front
portion 1603.

Fig. 17 is a top view 1700 of yet another embodiment of the tree grip illustrating
20 peaks 1703 and valleys 1701, 1702 illustrated in a multi-angled relationship. Fig. 17A is

a right side view 1700A of the embodiment of the tree grip illustrated in Fig. 17. Fig. 17B is a front view 1700B of the embodiment of the tree grip illustrated in Fig. 17.

Fig. 18 is a top view 1800 of yet another embodiment of the tree grip. Pyramid-shaped protrusions 1801 having a triangular base are illustrated. Fig. 18A is a right side view 1800A of the embodiment of the tree grip illustrated in Fig. 18. Fig. 18B is a front view 1802 of the embodiment of the tree grip illustrated in Fig. 18.

Fig. 19 is a top view 1900 of yet another embodiment of the tree grip illustrating cylindrical protrusions having a convexly-shaped upper portions 1901 extending outwardly for gripping wood.. Fig. 19A is a right side view 1900A of the embodiment of the tree grip illustrated in Fig. 19. Fig. 19B is a front view 1900B of the embodiment of the tree grip illustrated in Fig. 19.

Fig. 20 is a top view 2000 of yet another embodiment of the tree grip illustrating a combination of transverse serrations having peaks 2001 and valleys 2002 as well as lands 2004 having protrusions 1801 thereon. The protrusions may be in the shape of the pyramids previously described or they may have the convex heads as illustrated in Figs. 19 and 19A. Fig. 20A is a right side view 2000A of the embodiment of the tree grip illustrated in Fig. 20. Fig. 20B is a front view 2000B of the embodiment of the tree grip illustrated in Fig. 20. Those skilled in the art will readily recognize that protrusions having a different shape may be used. Further, those skilled in the art will readily recognize that lands may be created in the topography of the embodiments of the invention disclosed herein as Figs. 13, 14, 16 and 17 and that protrusions may be used in

the lands created therein.

While the invention has been described herein by way of example and with particularity, those skilled in the art will readily recognize that changes and modifications may be made to the invention without departing from the spirit and scope of the appended
5 claims.

10